

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

REC'D 06 MAY 2005

WIPO PCT

PCT

To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/IB2005/050300 ✓

International filing date (day/month/year)  
25.01.2005 ✓

Priority date (day/month/year)  
28.01.2004

International Patent Classification (IPC) or both national classification and IPC  
H04B7/08, H04B7/06, H04L27/26

Applicant  
KONINKLIJKE PHILIPS ELECTRONICS N.V. ✓

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/IB2005/050300

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/IB2005/050300

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**Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	2, 4, 6, 8
	No: Claims	1, 3, 5, 7, 9-12
Inventive step (IS)	Yes: Claims	2, 4, 6, 8
	No: Claims	1, 3, 5, 7, 9-12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

1. Reference is made to the following documents:  
D1: US-A-5 528 581 (DE BOT ET AL) 18 June 1996 (1996-06-18) cited in the application;  
D2: EP-A-1 249 980 (NIPPON TELEGRAPH AND TELEPHONE CORPORATION) 16 October 2002 (2002-10-16);  
D3: EP-A-1 047 209 (INTERUNIVERSITAIR MICRO-ELEKTRONICA CENTRUM VZW) 25 October 2000 (2000-10-25).
2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claims 1, 5, 9, 10, 11 and 12 is not new in the sense of Article 33(2) PCT.
  - 2.1. Regarding claim 1, the document D1 discloses (the references in parentheses applying to this document):  
diversity system (col. 1 lines 5-9) for transmitting a signal comprising at least two sub-carriers from a first unit to a second unit (fig. 2; col. 2 lines 9-18), which first unit comprises a transmitter for transmitting the signal (fig. 2), which second unit comprises a receiver coupled to at least two antennas located at different positions for receiving the signal (fig. 5; col.3 lines 18-27), which receiver comprises a transforming module for converting received antenna signals into sub-carrier-vectors per sub-carrier and per antenna (fig. 5 ref. 62, 64 ... 66; col. 3 line 66 - col. 4 line 5; col. 4 lines 13-15, 31-35) and a processing module for processing the sub-carrier-vectors per sub-carrier (col. 4 lines 35-40).
  - 2.2. The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claims 5, 9, 10, 11 and 12 which therefore are also considered not new.
  - 2.3. Same conclusions would have been reached using document D2 or D3.

3. Dependent claims 3 and 7 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D1, D2 and D3 and the corresponding passages cited in the search report.
4. The combination of the features of dependent claims 2, 4, 6 and 8 is neither known from, nor rendered obvious by, the available prior art. The reasons are as follows.
  - 4.1. The document D1 is regarded as being the closest prior art to the subject-matter of claims 2, 4, 6 and 8, and shows a transforming module for converting received antenna signals into sub-carrier-vectors per sub-carrier and per antenna.
  - 4.2. The subject-matter of claims 2, 4, 6 and 8 differs from this known D1 in that the transforming module converts, during a first time-interval, first antenna signals received via a first antenna and converts, during a second time-interval, second antenna signals received via a second antenna.
  - 4.3. The subject-matter of claims 2, 4, 6 and 8 is therefore new (Article 33(2) PCT).
  - 4.4. The problem to be solved by the present invention may be regarded as spare (inverse) transformers or words chip area (see description page 7 lines 26-27).
  - 4.5. The solution to this problem proposed in claims 2, 4, 6 and 8 of the present application is considered as involving an inventive step (Article 33(3) PCT), because nowhere in D1 there is a mention of the posed problem. Furthermore D1 does not provide any hint/suggestion to the proposed solution.

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